

Perception about Concussions in the Missouri Valley Conference

Lindsey Eckenrode
Faculty: Dr. Julie Scherz

Department of Communication Sciences and Disorders, College of Health Professions

Abstract. The purpose of this project was to survey student athletes, athletic trainers, and coaches in the Missouri Valley Conference to determine their respective understanding of concussions, to assess how athletic trainers and coaches make determinations about returning to competition of the athletes who have suffered from concussion, to compare student athletes and professionals who work with student athletes in terms of concussion-related attitudes and opinion, and to identify any tools used to assess concussion and to make recommendations about returning to play. We anticipate that there may be some variability among sports (e.g., low impact vs. high impact sports), and between players, coaches and trainers. Our findings from the survey should lead to better understanding of perceptions about concussions and future educational information that might be needed for players, coaches and trainers.

1. Introduction

The impact of concussions on both professional and amateur athletes has been in the news a great deal recently. The number of sports related concussions is estimated around 300,000 per year (Faure and Pemerton 2010). One of the most frustrating aspects of concussions is that there is no visible physical problem in person or visible on MRI or CT scans (Guskiewicz et. al. 2005). The symptoms of concussion also vary from person to person and concussion to concussion. Assessment tools vary from clinician experience to balance tests and neuropsychological testing (Ferrara et al. 2001). Because some of the assessment tools rely on the athletes input about how they are feeling and because there is no way for the tests to determine if the athlete is always telling the truth, it is hard to objectively quantify the magnitude of the problem. This researcher wanted to survey the thoughts about and understanding of concussions by coaches, athletic trainers, and student athletes. The researcher also wanted to know who makes critical decisions if an athlete receives a concussion and when he or she is allowed to return to play and what assessment tools they use during the diagnostic and decision-making processes.

2. Experiment

Two surveys were developed; one survey was for athletic trainers and head coaches at Missouri Valley Conference (10) and Missouri Valley Football Conference (4) schools. A different survey was created for student athletes at Missouri Valley Conference and Missouri Valley Football Conference schools. Emails were sent to athletic trainers and compliance directors of all Missouri Valley Conference and Missouri Football Conference schools who were then asked to send the survey on to their athletes and coaching staff. 30 student athlete surveys came back and 34 athletic trainers and coaches questionnaires were received. All were valid and comparisons were made among athletic personnel (coaches and athletic trainers (n= 34) and student athletes (n=30). Both surveys had multiple choice questions and open ended questions that focused on finding out levels of understanding and views of concussions, tools used for diagnosis, and return to play protocols. The surveys took approximately ten minutes to complete.

3. Results

To determine levels of understanding of concussions, athletic personnel and student athletes were asked to select specific symptoms of concussions from a list. Results showed all coaches chose three main symptoms (dizziness, headache, and sensitivity to light) from a list of eleven items. One hundred percent of athletic trainers selected the same six symptoms (difficulty concentrating/focusing, dizziness, sensitivity to light, hearing problems, nausea, and headache) from the list of eleven. All student athletes selected the same two symptoms, headache and dizziness. A four point rating scale was used to determine student athlete's views of concussions in terms of short and long term effects. High impact vs. low impact sports were analyzed and the results can be found in Table 1 and 2. Results showed that low impact sports are less concerned about concussions than high impact sports for both short term and long term effects. Athletic personnel and student athletes were also asked if they received training or information about concussions during the academic year. Results showed that 7% of coaches, 40% of athletic trainers, and 93% of student athletes receive training and/or information about concussions. Athletic trainers picked from a list of evaluation tools which tools they used to make a determination if a student athlete has a

concussion. The list of evaluation tools can be seen in Table 3. Diagnostic decision making results show that doctors and athletic trainers work together to make decisions on diagnosis, return to practice, and return to competition protocols. The most significant discrepancies in results came from rates of concussions going unreported: 75.8% of athletic staff (coaches 93% and athletic trainers 60%) said they thought concussions are reported but 93% of student athletes thought concussions go unreported.

Table 1

Short Term Effects	High Impact Sport	Low Impact Sports
Extremely Concerned	13%	0%
Very Concerned	13%	13%
Concerned	67%	27%
Not Concerned	7%	60%

Table 2

Long Term Effects	High Impact Sport	Low Impact Sports
Extremely Concerned	7%	0%
Very Concerned	20%	27%
Concerned	67%	27%
Not Concerned	7%	47%

Table 3. Assessment Tools Used by Athletic Trainers

Clinician Examination 100%	Concussion Grading system 40%	Neurocognitive testing 53%
Symptom checklist 80%	Standardized assessment of concussion 80%	Balance error scoring system 13%
SCAT2 20%	Other	

4. Discussion

In regards to symptom identification of student-athletes, there were no differences in selection of symptoms based on high impact (volleyball, football, basketball, and baseball) and low impact (track and field) sports. The recent spotlight in the media about concussions could be a contributing factor of why certain symptoms were chosen.

It should be noted that athletic trainers and doctors use symptom identification and rating often on evaluation tools. If student athletes know the symptoms, they can help athletic medical staff with not only evaluation, but also return-to-play protocols. Athlete's ability to identify symptoms is beneficial, but can sometimes be a difficult. The clinical assessment tools used by athletic trainers to assess concussions often use tools in which student-athletes need to identify or rate their symptoms. If a student athlete knows the symptoms of a concussion (e.g. headache) and is asked if they have a headache, they can decide to not report the symptom or decrease the rating to the medical staff. Student-athletes often must practice to have the opportunity to play in the competition. If they have the potential of not being able to practice because of a concussion, and then not be able to compete, they many decide to not report symptoms of the concussion in fear of losing playing time or their position. This may also be a reason why student athletes think concussions go unreported while coaches and athletic trainers think most concussions get reported. Another aspect of evaluation or concussions that should be notes is that doctors are often the ones who determine if a student-athlete has a concussion. Doctors may be on staff for a university, but they are not at every practice or competition. Doctors rely on athletic trainers evaluations to help them make their medical assessments. Currently no Missouri Valley Conference diagnostic or return to play protocols or student-athlete and coaches training requirements are required.

3. Conclusions

Results indicated a significant difference in the thoughts about reporting concussions. This could be caused by many factors, including the impact of having concussions on missed practice and competition. Schools in the Missouri Valley Conference use a variety of tools to assess concussions in student-athletes. These tools include having student athletes report their own symptoms. Training of some nature occurs for student athletes but not at the same rate for coaches and athletic trainers. The reasons why student athletes do not report concussions still need to be investigated.

[1] Guskiewicz, K. M., Bruce, S. L., Cantu, R. C., Ferrara, M. S., Kelly, J. P., McCrea, M., Putukian, M., & McLeod, T. C. (2004). National athletic trainers' association position statement: Management of sport-related concussion. *Journal of Athletic Training, 39*(3), 280-297.

[2] Faure, C., & Pemberton, C. L. (2010). Concussion and the young athlete. *Journal of Physical Education, Recreation & Dance, 81*(1), 19-26.

[3] Ferrara, M. S., McCrea, M., Peterson, C. L., & Guskiewicz, K. M. (2001). A survey of practice patterns in concussion assessment and management. *Journal of Athletic Training, 36*(2), 145-149.